

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior versions, and all prior listings, of claims in the application:

Listing of Claims:

Claims 1.-37. (cancelled)

38. (New) A method of manufacturing a semiconductor integrated circuit device, comprising the steps of:

(a) providing a silicon wafer covered with an insulating film whose main surface is mainly formed of silicon oxide;

(b) cleaning a surface of said silicon wafer covered with the insulating film at an ordinary temperature with a processing solution which contains hydrogen peroxide, hydricid fluoride salt, and water, and also contains HF and HF_2^- as etching seeds of the silicon oxide, under conditions that said insulating film is etched but said silicon wafer is not etched, the concentration of said hydricid fluoride salt being in the range of about 0.1 to 3 mol/l;

(c) removing said insulating film after said step (b), thereby to expose the surface of said silicon wafer; and

(d) subjecting said silicon wafer to a heat-treatment after said step (c), thereby to form a gate oxide film over said silicon wafer.

39. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein the hydracid fluoride salt included in said processing solution is ammonium fluoride.

40. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein the hydracid fluoride salt included in said processing solution is tetraalkyl ammonium fluoride.

41. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein said processing solution further includes a surfactant.

42. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein in the step of cleaning the surface of said silicon wafer, said processing solution is ultrasonically vibrated.

43. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein said processing solution has a pH of 6 to 11.

44. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein the processing solution has a temperature of 40°C or less during the processing.

45. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein said insulating film is removed by dipping it into a mixed solution of hydricid fluoride and water.

46. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein prior to the step of forming said gate oxide film on the surface of said silicon wafer by heat-treatment of said silicon wafer, and after removing said insulating film, the surface of said silicon wafer is dried.

47. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, further comprising a step of performing a heat-treatment in an atmosphere of NO or N₂O after forming said gate oxide film on the surface of said silicon wafer, thereby to segregate nitrogen at the interface between said gate oxide film and said silicon wafer.

48. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein each silicon wafer is subjected to the steps (b) through (d) on a sheet-by-sheet basis.

49. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 38, wherein said processing solution has a concentration of hydrogen peroxide of 0.1 to 5%.

50. (New) A method of manufacturing a semiconductor integrated circuit device according to claim 49, wherein said processing solution has a pH of 6 to 11.